



Fermi National Accelerator Laboratory
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Fermilab Status Report
650 MHz, PROJECT GOALS AND TIMELINES
ED0002083, Rev. C

PIP-II, 120A.02.05.02, 650 MHz Cavities and Cryomodules

Rev.	Due Date	Description	Originated By	Approved By
A	23 JAN 2015	1 st Quarter Report	<i>Anna Grassellino</i>	<i>SH, PD, CJ</i>
B	24 APR 2015	2 nd Quarter Report	<i>Anna Grassellino</i>	<i>SH, PD, CJ</i>
C	24 JUL 2015	3 rd Quarter Report	<i>Anna Grassellino</i>	
D	23 OCT 2015	4 th Quarter Report	<i>Anna Grassellino</i>	

**If YTD spending differs from the YTD budget by $\pm 10\%$ (refer to the project status financial results for % of YTD budget), provide a description of the reason for the variance and if the work effort will be on budget at the end of the fiscal year.*

This report describes the current status at the end of: ☐ Q1 FY15 ☒ Q2 FY15 ☐ Q3 FY15 ☐ Q4 FY15

1. Level 3 Project Goal Status:

Primary Project Goals	Status (Complete or Projected Date)
Process and vertically test 8 High Beta (HB) cavities fabricated in FY14	8/8 cavities processed and 6/8 tested. Two cavities to be tested in August. Projected completion September 2015
High Q0 studies (Q x 2)	3 N doped, two 120C baked and one EP cavities processed and tested. Two more N doped processed and to be tested. Cooling studies performed. Q obtained in the range 4 to 7e10 (two to three times specification). Projected completion September 2015
Cavity design	Almost completed (Sept FY15), HOMs simulation completed
Coupler and tuner design	Ongoing (will continue in FY16)
CM conceptual design	Started (will ramp up and continue in FY16)

2. Budget Status

- a. FY Annual Budget: \$970.3K
- b. FY YTD Budget: \$727.7K
- c. FY YTD Spending: \$500.2K
- d. % of YTD Budget: 68.7%
- e. Level 3 Manager Evaluation*:
 - i. Conflicts with higher priority project LCLS-2 have slowed down work, but funds are being redirected to Lab-2. Expect that will come close to be on budget at the end of the FY.

3. Briefly describe the work that was completed during this quarter.

- a. Two more single cell high beta 650 have been processed and are ready for vertical test which is scheduled to occur in early August. Cooling studies through critical temperature have been performed on cavities of different surface treatments to understand impact of ambient fields on performance and set cooling/shielding specifications for the CM design. Some effort in tuner design, coupler design and CM conceptual design has taken place, but it is expected to ramp up in the next FY. Heavier work has taken place in HOMs simulations and cavity design which is almost finalized. Significant work has started in the area of mechanical design for multicell processing, which is almost completed. Therefore a multicell is expected to be processed in August.

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4. Briefly describe any issues, either negative or positive, that management needs to be aware of that could impact the agreed upon PIP-II R&D deliverables in this fiscal year or beyond.
 - a. Facilities and manpower conflicts continue to exist with the highest priority project LCLS-2. Due to these conflicts, work has moved a bit slower than originally planned and needed. It is expected that things will improve in August, when the prototype CM work for LCLS-2 is expected to be completed.

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